

Governance and Economic Growth

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Abstract

Because protection of property rights cannot be appropriated by any individual, it is widely recognized as being the state's responsibility. Moreover, recent empirical evidence suggests that protection of property rights leads to higher investment levels and faster growth. The extent of property rights protection differs significantly across countries. Gradstein integrates the emergence of property rights within a simple growth

framework. Drawing on North (1990), he presents a model where economic performance and enforcement of property rights may reinforce each other. Initial conditions determine the economy's convergence to a high-income or a low-income steady state. Existing empirical evidence offers tentative support for this theory.

This paper—a product of Public Services, Development Research Group—is part of a larger effort in the group to understand the role of governance for economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-607, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at mgradstein@worldbank.org. July 2003. (14 pages)

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1. Introduction

Maintaining law and order, in particular, securing property rights, is probably the most acceptable rationale for government intervention. Theoretically, it is argued that enforcement of property rights being a public good, its provision can only be materialized through collective action. Empirically, several studies, discussed more in detail below, have reported robust correlations between the enforceability of property rights and measures of economic performance.

Yet, economies differ greatly in the extent to which property rights are enforced. Several pieces of empirical evidence suggest, in particular, a strong positive association between the level of a country's development and the enforcement of property rights. Bardhan (1997) for example, cites the experience of Singapore, where recent economic growth has induced a drastic reduction in corruption, so that Singapore is now one of the world's least corrupt countries. It is also interesting to compare the recent experience of some transition economies in East Europe in this regard. While countries like Estonia and Hungary have attained moderate scores on the quality of government and robust growth rates in the post-communist era, the relatively more backwards countries such as Moldova and the Ukraine have achieved little on both counts. Moreover, in their authoritative account, two experts on the transition experience in Russia write:

"In developed market economies, a conventional system of property rights enforcement and contract implementation is provided by the government and the judiciary and paid for by taxes. However, if this can be considered to represent the first-best solution, the immediate implementation of such a solution in Russian case is hopeless... Widespread tax evasion has left the government without enough revenues to pay even those meager salaries it offers to its law-enforcement officers (including the police force, prosecutors, and judges)." (Braguinsky and Yavlinsky 2000)

Taken together, these examples suggest a double feedback relationship between economic development and enforcement of property rights, in particular, indicating that affluent economies are likely to more affectively enforce property rights than poor

economies.¹ This paper is an attempt to capture this relationship in a simple growth model, augmented with political economy features. It is assumed that a part of productive investment in the economy is subject to rent-seeking redistributive activity. The fraction of resources available for such redistribution is endogenously determined through collective decisions on the extent of property rights enforcement. Specifically, property rights can be fully secured by incurring a cost. In line with the public good nature of property rights, we assume indivisibility in the production of their enforcement. This ensures that enforcement of property rights will only take place in rich economies, where the individuals are affluent enough to be willing to meet the enforcement cost. But a better enforcement of property rights causes economic growth, thus perpetuating the willingness to secure property rights. As a result, it is shown that two steady states are likely to be realized: one, with a full protection of property rights and a high income level, and another, with only a minimal protection of property rights and a low income level. One implication of this analysis emphasizes the importance of commitment mechanisms to ensure enforcement of property rights; the absence of such commitment may induce lower investment and higher rent seeking thus lowering growth. Another implication indicates a role of international lending institutions in providing resources to implement governance reforms so as to allow a poor economy to take off.

The paper is organized as follows. The next section presents the basic setup, which is followed by the presentation of the results in section 3. Section 4 discusses empirical findings, policy implications, and relation to the literature, and section 5 concludes with brief remarks.

2. Basic Framework

The economy is populated by a continuum of households indexed by i and represented by the unit interval, each consisting of a parent and child; it operates in discrete time t . The initial level of household income is y_0 , and y_t denotes the income

¹ As North (1990) puts it, “economic history is overwhelmingly a story of economies that failed to produce a set of economic rules of the game (with enforcement) that induce sustained economic growth.”

level in period t . Initially, the amount of law and order as reflected by the protected fraction of individual income is L_0 , $0 < L_0 < 1$, and L_t denotes the protected fraction of income in period t .

The level L_0 is interpreted as a minimal protection of property being guaranteed by the prevailing social norms or “natural law” and, therefore, not requiring any explicit costs of enforcement.² The role of informal, cultural factors in maintaining property rights has been recently empirically documented, see, for example, Knack and Keefer (1997b). More specifically, Mauro (1995), and Easterly and Levine (1997), in their cross-country analyses find that measures of ethnolinguistic fractionalization are directly related to corruption and rent seeking; Alesina and others (1999), detect their negative impact on policies within U.S. communities. Glaeser and others (2000), find relationship between ethnicity and trust, which affects the efficiency of economic transactions in an experimental setting. These factors can provide an empirical underpinning for the initial minimal level of property rights enforcement. To obtain interesting results, L_0 is assumed to be small.

In contrast, to secure a full protection of property rights, $L_t = 1$, requires a costly investment, T , which is funded through taxes.³ Because all individuals within a cohort possess identical incomes, their burden in financing the cost of enforcement is also identical, so that T can also be interpreted as an individual cost in protecting property rights. The interesting case will be the one where T is not very small.

In each period, the individuals divide their income between paying taxes to meet the cost of law and order, current consumption and investment so as to satisfy the budget constraint:

$$y_{it} = c_{it} + k_{it} + T\delta_t \quad (1)$$

² See Konrad and Skaperdas (1998), for a simple model of how social norms shape initial property rights.

³ Apart from direct costs of designing the legal system, this consists of the cost of collecting information, monitoring behaviour, and building reputation for law enforcement.

where δ_i is an indicator function, assuming the values of 1 if property rights are fully protected and 0 if no investment is made to guarantee property rights protection.

Each household is endowed with one unit of time, which is allocated between productive activity, w_{it} and unproductive activity, u_{it} according to the constraint:

$$1 = w_{it} + u_{it} \quad (2)$$

Next-period gross income of household i , z_{it+1} is then produced using both capital and labor as inputs, according to the following technology:

$$z_{it+1} = A k_{it}^\alpha w_{it} \quad (3)$$

where $A > 0$ is a exogenously given parameter of technology to which all individuals have access, and $0 < \alpha < 1$, which implies diminishing returns to scale.

While a fraction L_t of income is fully protected, the remaining $1 - L_t$ is available for redistribution through unproductive or rent-seeking activity. Letting $Z_{t+1} = \int z_{it+1} di$ denote the aggregate income, $(1 - L_t)Z_{t+1}$ is, therefore, the amount of income available for rent seeking. It is assumed that a spending of u_{it} on rent seeking secures individual i the fraction of $r(u_{it}) / \int r(u_{it}) di$ of aggregate income, where r is increasing, concave, with $r(0) = 0$, $r(1) = 1$, and $r(0) / \int r(0) di = 0$. This specification is very common in the rent-seeking literature—see Nitzan's survey (1994). The important difference is that in the present formulation, because every agent is atomistically small, the individuals presume that their rent-seeking efforts do not have aggregate consequences; see, however, an extension below which modifies this assumption.

The net next-period income, y_{it+1} , is the sum total of work-generated income and income that accrues through rent seeking,

$$y_{it+1} = L_t z_{it} + (1 - L_t) Z_{t+1} r(u_{it}) / \int r(u_{it}) di \quad (4)$$

The income is bequeathed to one's child. Each parent's preferences derive from consumption as well as from the amount of income transferred to the child. Assuming logarithmic preferences, we write:

$$V(c_{it}, y_{it+1}) = (1-\beta)\log(c_{it}) + \beta\log(y_{it+1}), 0 < \beta < 1 \quad (5)$$

In each period, the adult individuals first determine the extent of property rights protection by collectively setting L_t . Then each parent makes his consumption-investment decision; thereafter, the work-appropriation decisions follow. The equilibrium consists of such mutually consistent decisions.

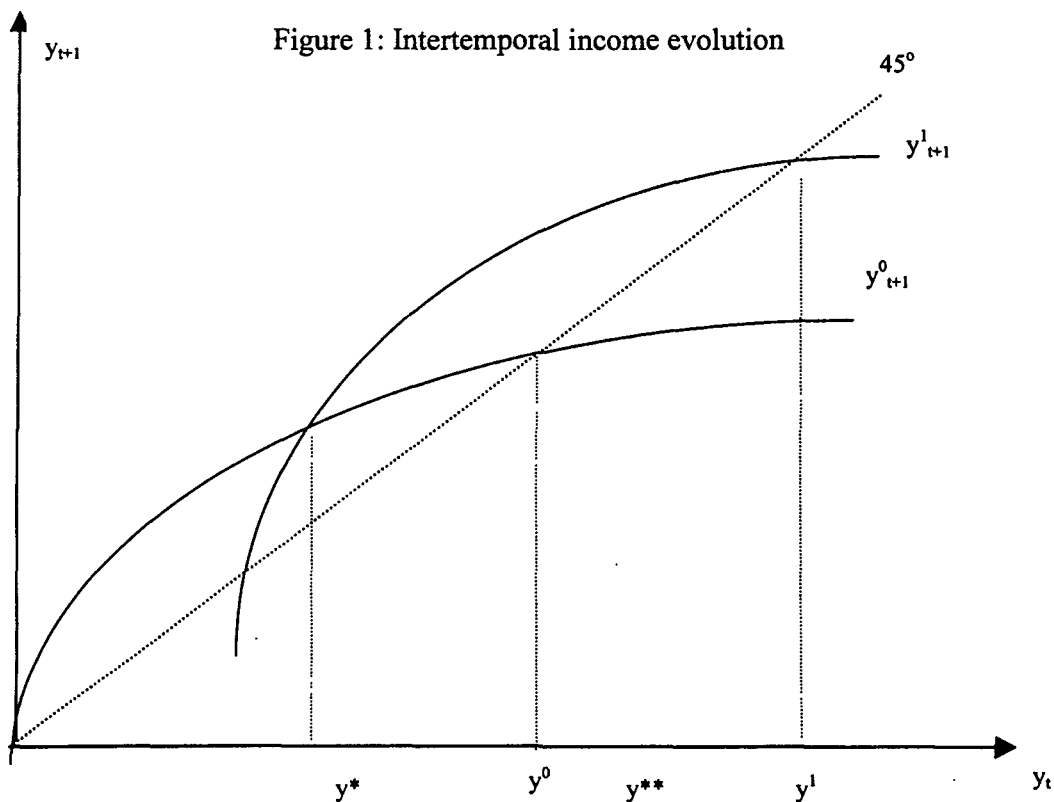
3. Equilibrium

The above assumptions guarantee that, despite the dynamic setting, the decisionmaking problem is essentially a static one and consists of equilibrium allocations made by the parents. The analysis proceeds backwards starting with the determination of time allocation between work and rent seeking given the investment decisions; its details are presented in the appendix available from the author.

Note that, given that the productivity parameter A is large enough, under each regime the economy converges to a steady state level of income denoted y^0 when $L_t = L_0$, and y^1 when $L_t = L_1$.⁴ Provided that L_0 is sufficiently small as we have assumed is the case, $y^1 > y^0$, Figure 1 illustrates this by presenting the intertemporal income evolution in both cases. Moreover, when current income level is small enough, next-period income is lower under full protection of property rights than under minimal protection. The reason for this is that the economic performance under full protection of property rights is adversely affected in the short run by the tax burden, but recovers afterwards.

These properties are summarized in Proposition 1 below and illustrated in Figure 1.

⁴ Specifically, $y^0 = (A(1-u))^{1/(1-\alpha)} [\alpha\beta L_0 y^0 / (\alpha\beta L_0 + 1 - \beta)]^{\alpha/(1-\alpha)}$ and $y^1 = A [\alpha\beta(y^1 - T) / (\alpha\beta + 1 - \beta)]^\alpha$



Proposition 1. Current consumption is higher, but steady state income level is lower under minimal protection of property rights than under full protection. Next-period income is higher under the former if present income is low, but is higher under the latter when present income is high.

The above results have direct implications for welfare comparisons between the two regimes. When present income is low, both consumption and next-period income are higher without full protection of property rights, so that this regime attains a higher level of welfare. In contrast, when present income is high enough, the resulting increase in next-period income under full enforcement of property rights more than compensates the lower level of consumption, thus causing welfare to be higher. The intuition here is straightforward: while the tax burden associated with full enforcement is significant in a poor economy it ceases being so, as taxes contribute a smaller share of income.

To sum up,

Proposition 2. When the economy is poor enough, the regime of minimal protection of property rights leads to a higher welfare level; however, in a rich economy, full property rights protection is a preferable regime.

It can then be shown that welfare increases in income faster under full protection of property rights. Along with the above proposition this implies that there exists a unique threshold level of income that leads to indifference between the two regimes, y^{**} : when present income is higher than the threshold (and only then) is the regime of full protection of property rights superior to the regime of minimal protection. Also note that y^{**} must be higher than the level of income which makes next-period income equal under the two, y^* . The reason for this is that consumption is lower under full protection. Moreover, if L_0 is sufficiently small then $y^{**} > y_0$ (because y_0 is arbitrarily small)—see Figure 1.

We are now in a position to trace the intertemporal evolution of the economy. If the initial income level is below y^{**} , then minimal protection of property rights is welfare superior. If the economy's growth rate is low in this case, then minimal property rights protection will continue to dominate throughout the convergence to the steady state; specifically, if L_0 is small enough, the steady-state income level is small, $y_0 < y^{**}$, which implies that then switching to full property rights enforcement will never take place. In contrast, if the initial income level is above y^{**} , then full protection of property rights is selected, and the economy converges to a higher steady-state income level, y' . Thus, the economy's evolution is history dependent and has multiple steady states.

In contrast, if L_0 is moderate, then as can be seen from Figure 1, the economy converges to the high steady state, independently of the initial conditions. This is the case when even with a minimal protection of property rights growth is sufficient to eventually enrich the economy, so that full protection of property rights is subsequently preferred.

Thus, we obtain

Proposition 3. If the initial level of property rights enforcement is very low, the economy's intertemporal evolution exhibits multiple equilibria depending on initial income level: if it is low, the initially low level of property rights enforcement persists, and the economy converges to a low steady-state income level; if it is high, the economy eventually embraces the regime of full property rights protection and converges to a high income steady state. If the initial level of property rights protection is moderate, the economy adopts full property rights protection and converges to a high income steady state, independently of the initial income level.

4. Discussion

In this section, I first discuss some relevant empirical findings; then consider two policy implications of the above results; and, finally, relate the paper to the existing literature.

4.1 Empirical Evidence

Quite a few empirical studies present empirical evidence that the quality of governance has a robust effect on growth. Early contributions include Barro (1997), Knack and Keefer (1997a, b), Mauro (1995), Svensson (1998). More recent and detailed supportive evidence is provided in Chong and Calderon (2000), and in a working paper Kaufmann and others (1999a). In the last study, the authors find that a one-standard deviation increase in any of their governance indicators causes between a two-and-a-half and four-fold increase in per capita incomes. There are several channels through which this relationship can be manifested. Knack and Keefer (1997b), and Mauro (1995), for example, find that poorly protected property rights affect physical investment. King and Levine (1993), Demirguc-Kunt and Maksimovic (1998), among others, present similar evidence with regard to investment in financial assets.

Evidence on the reverse relationship, from income to corruption, can be gauged using Kaufmann and others (1999b), which provides an excellent dataset on the quality of governance across more than 150 countries, exhibiting six measures of quality of governance. My own calculations based on these data suggest that the partial correlation between income per capita and the different measures of quality of

government across these countries hover between 0.70-0.90, and the correlation between income per capita and the rule-of-law variable is in the upper range of this interval.⁵ Treisman (2000), finds empirical support for the moderating effect of income level on corruption in his more rigorous statistical analysis.

The data have been expanded and the methodology upgraded in Hall and Jones (1999), Kaufmann and others (1999a), and Chong and Calderon (2000). All three studies recognize that different observable measures of quality of governance can be construed only as proxies for the variable of interest, and all studies are aware of the simultaneity of the relationship between these measures and growth. Their econometric analyses take care of these issues.

Hall and Jones (1999), is rooted in growth accounting and focuses on cross-country differences in income per capita arising in a steady state.⁶ It employs subjective evaluations of aspects of governance, such as bureaucratic efficiency, corruption, maintenance of law and order, supplemented by the degree of openness to international trade.⁷ The authors use various geographic and linguistic measures of the effect of the Western culture as instruments. Using cross-sectional evidence for 127 countries, the paper presents robust findings on the positive effects of good governance on growth, which significantly supplements the effect of physical and capital accumulation. The authors argue that the extent to which a country was exposed to Western influence has played a crucial role in its ability to design proper institutions for good governance. Kaufmann and others (1999a), is similar in many respects. It uses an enlarged dataset and constructs a much wider battery of measures of governance quality based on a variety of (subjective) sources, incidentally dismissing the trade openness variable. This study's conclusions reinforce by and large Hall and Jones' (1999), results. Although the findings in both these studies are generally in line with this paper's theory, the work of Chong and Calderon (2000), can be viewed as providing the most direct supportive

⁵ All linear regressions of income per capita on the measures of government quality yield highly significant results.

⁶ The authors refer to their approach as "level accounting".

⁷ These evaluations are provided by a private consulting firm, Political Risk Services, which specializes in providing assessments of countries' political risks. The measures of governance used by different researchers are typically based on such subjective judgments.

evidence. There, the authors explicitly test for the mutual causality between good governance and growth, suggesting “multiple institutional equilibria”, whereby good institutions promote growth, which then leads to the adoption of good institutions. They conclude that causality runs in both directions thus providing tentative support for the theoretical claim made above.

4.2 *Policy Implications*

In contrast to the previously made assumption, suppose that the government cannot precommit itself to the rule of law. In other words, while the extent of property rights protection is determined before the individuals actually engage in rent seeking, suppose that their investment choices have already been made. Thus, first come the investment decisions; then the choice of rule-of-law, then time allocation. Since investment—being now inelastic—is not affected by the enforcement decision, full enforcement is now less advantageous. Thus, the government has an ex post incentive to renege on its obligation of full enforcement. But correctly anticipating such a breach of commitment and the resulting intensive rent-seeking effort, the individuals will tend to underinvest. This stresses the importance of a firm commitment to enforcement rules that in principle could be achieved by other means such as a constitutional commitment, an independent judiciary etc.

The above results rest on the (quite reasonable) assumption that the world’s capital market is imperfect, so that a poor country cannot borrow resources to finance a better enforcement of property rights. This indicates the importance of credit availability in order to implement the necessary reform of the judiciary and law enforcement agencies. Such credit can only be provided by international lending institutions. Thus, our analysis suggests an important role for such institutions implying particular ways of framing conditionality requirements on their loans. Indeed, the World Bank’s loans for legal and judicial reform efforts worldwide are currently worth over \$380 million.⁸

⁸ See the transcript of the speech by the President of the World Bank on July 9, 2001, in St.-Petersburg, Russia, press release 2002/013/S, available on website <http://econ.worldbank.org/>

4.3 *Literature*

This paper draws on the seminal contributions of North (1990), and Olson (1996), which stress the role of institutions for economic development and some of its results are also related to Olson's (1982), on interest groups as an impediment to growth. Both authors acknowledge the importance of the double feedback relationship between institutions and economic performance in their informal analyses, which is the point made in this paper as well.

While the motivation for this paper is provided by the recent empirical evidence briefly summarized above, the specifics of the presented model are related to two branches of the literature and, in a sense, builds on their insights. One building block is the literature on economic consequences of appropriative activities. Important papers in this literature include Skaperdas (1992) and Grossman and Kim (1995), who have focused on endogenous determination of property rights. In particular, the latter paper studies the emergence of property rights as an equilibrium of aggressive and defensive individual investments. The shared component between the present paper and this work is the endogeneity of property rights enforcement.

That earlier literature has not been explicitly interested, however, in growth implications of property right enforcement. More recent literature, exemplified by Lane and Tornell (1996), and Tornell (1997, 1999) studies the effects of imperfectly protected property rights on growth. It typically views the economy as consisting of rival interest groups competing over a common pool of resources. In a somewhat related vein, Ehrlich and Lui (1999), also study the relationship between the quality of government ("corruption") and growth. Likewise, Zak (2002), is also concerned with economic growth in the shadow of appropriation threats. In an earlier paper, Gradstein (2002), I have shown that commitment to redistributive rules results in faster growth than discretionary redistribution, and this effect is stronger in an unstable economy. All this work does not consider, however, the endogenous determination of the level of protection itself, which is an essential feature of this paper.

5. Concluding Remarks

This paper formalizes the self-enforcing relationship between the enforcement of property rights and economic growth, first introduced in North (1990), and Olson (1982, 1996). A crucial aspect of the model is that law enforcement, while leading to a better protection of property rights (and, therefore, is growth-promoting) is costly and requires resources which only exist in sufficiently affluent economies. Thus, the analysis identifies two steady states: one with only minimal protection of property rights and low income, and the other with full protection of property rights and high income. The recent empirical findings are interpreted as being broadly supportive of this theory.

Our view of law enforcement as a public good, which the government is expected to provide under a contractual commitment, differs from some of the recent literature on appropriation with a more sinister attitude. A very interesting work such as Konrad and Skaperdas (1999), and Moselle and Polak (2001), exhibits a more suspicious attitude towards the state, arguing that it could be damaging even if the alternative is the relative absence of law enforcement. Consideration of the implications of this contrasting approach for economic growth could constitute a worthwhile extension of the paper.

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